Volkswagen Passat B6 2005 - > (B6)

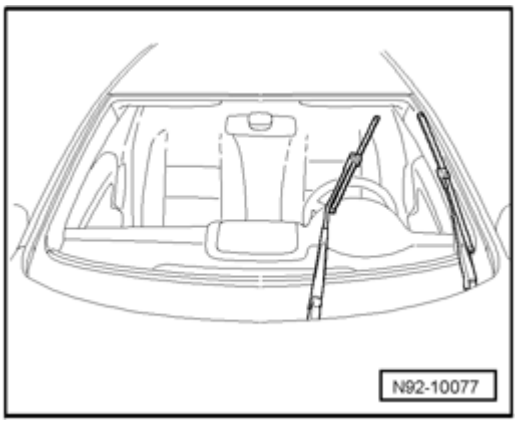
Windshield Wiper System

General information

Caution!

When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified in this Repair Manual ⇒ ***27-4, Battery, disconnecting and reconnecting*** ***.***

Wiper Motor Control Module J400 is integrated with Windshield Wiper Motor V .



To remove wiper blades, wiper arms must be driven into "service/winter position" . The "service/winter position" is activated by operating windshield wiper lever in "touch sweep" position within 10 seconds after switching off ignition ⇒ *Owners Manual* .

Note:

- *Additional information:*

⇒ *Owners Manual*

⇒ *Self Study Program - Course Number 891503 "The 2006 Passat Introduction"*

⇒ *Self Study Program - Course Number 871503 "The 2006 Passat Electrical Systems Design and Function"*

⇒ *Electrical Wiring Diagrams, Troubleshooting and Component Locations binder*

CAN-Bus wire repairs ⇒ 97-8, Repairing CAN-Bus wires

On Board Diagnostic (OBD), function

The Wiper Motor Control Module J400 is equipped with On Board Diagnostic (OBD) capabilities to assist in troubleshooting.

For troubleshooting, use Vehicle Diagnostic, Testing and Information System VAS 5051/5052 in operating mode "Guided Fault Finding" .

Windshield Wiper - Alternating Park Position (APP) function, deactivating

Windshield wiper system is equipped with Alternating Park Position (APP) function).

Every other time the wipers are witched off, the APP function causes the wiper arms to move upward slightly from the lowest position, causing the wiper blade rubbers to "flip" or tilt in a manner that "alternates" from the previous switch-off event.

APP function serves to increase wiper blade service life by alternating the wiper rubber contact angle at the windshield after use.

In order to install the crank on the wiper motor in the proper position, it is necessary to shut off the motor in the lowest park position. This is done by deactivating the APP function.

Note:

- *Activating APP function is not possible.*
- *APP function is automatically activated after 100 wiping cycles. This applies to wiper motors in which the APP function was deactivated as well as for new wiper motors.*

- Connect Vehicle Diagnosis, Testing and Information System VAS 5051/5052 ⇒ 97-1, VAS 5051 / 5052

- Select operating mode "Guided Fault Finding"

- Enter information as prompted and press ">" to confirm.

After the DTC memory of all control modules has been checked:

- Use "Go to" button to select "Function / Component Selection"

- Select "Body (Repair Group 01; 27; 50-97)"

- Select "Electrical system int/ext (Repair Group 01; 27; 90-97)"

- Select "01 - Self-diagnosis"

- Select "Vehicle Electrical System Control Module"

- Select "Vehicle Electrical System Control Module functions"

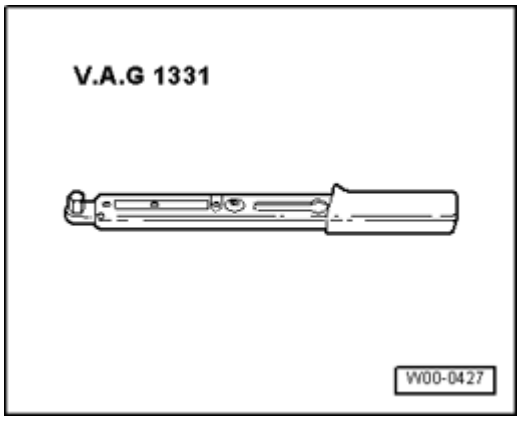
- Select "Coding control module for wiper electronics/deactivating APP"

- Press ">" to confirm.

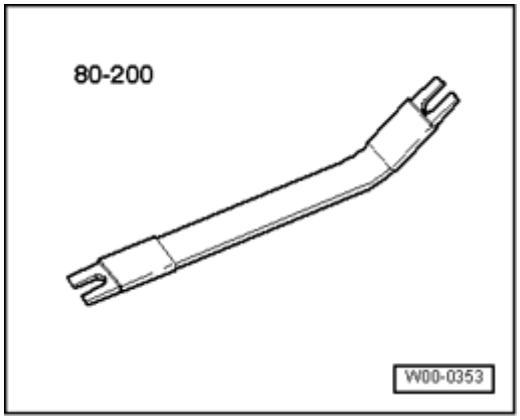
- Follow tester prompts

Windshield wiper assembly, removing and installing

Special tools, testers and auxiliary items required



- Torque wrench VAG 1331 (or 5 - 50 Nm equivalent)



- Pry lever 80-200

Windshield wiper assembly, removing

- Deactivate APP function ⇒ 92-1, Windshield Wiper - Alternating Park Position (APP) function, deactivating .

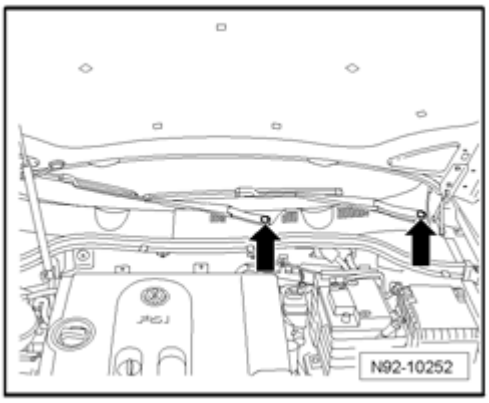
- Operate wipers briefly and allow to move to park position. Switch off ignition.

- Disconnect battery ⇒ 27-4, Battery, disconnecting and reconnecting .

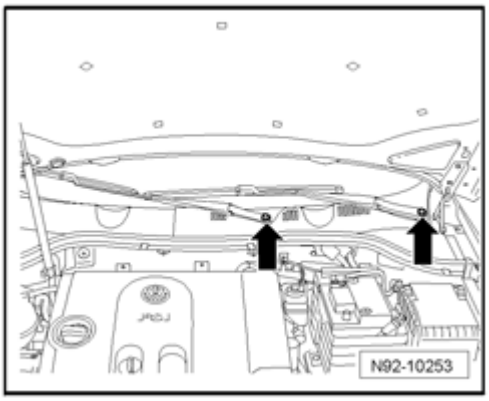
Caution!

When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified in this Repair Manual ⇒ 27-4, Battery, disconnecting and reconnecting .

Wiper arms, removing



- Pry off covers **- arrows -** using an appropriate screwdriver.



- Loosen nuts **- arrows -** , do not remove.

- Lift wiper arm and loosen by gently rocking back and forth on shaft until felt to release.

- Remove nut and wiper arm.

- Repeat procedure for passengers side if necessary.

Plenum chamber cover, removing

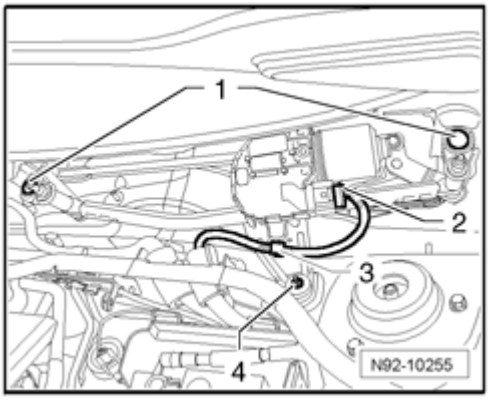
Remove left and right plenum chamber cover(s) as applicable

⇒ *Repair Manual, Body Exterior, Repair Group 64,*

Wiper frame with linkage and wiper motor, removing

Note:

- *In order remove the wiper frame with linkages and wiper motor, wiper arms and plenum chamber cover (s) must be removed.*



- Release and disconnect electrical connection **- 2 -** .

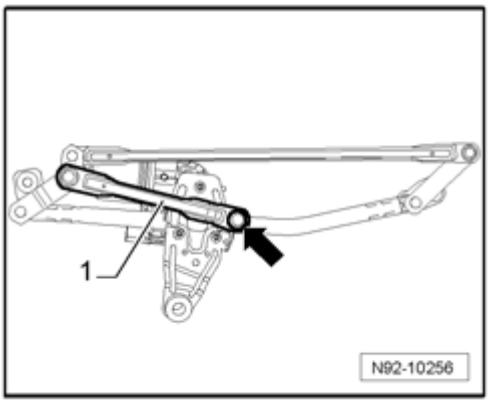
- Unclip harness retainer **- 3 -** from wiper frame bracket.

- Remove lower nut with washer **- 4 -** .

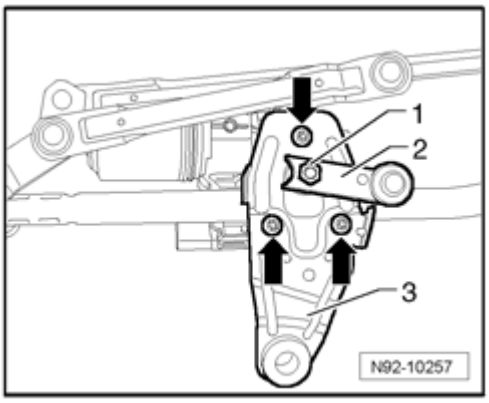
- Remove upper screws **- 1 -** .

- Remove wiper frame with linkages and wiper motor from vehicle.

Wiper motor, removing from wiper frame



- Pry off ball head **- arrow -** of linkage **- 1 -** from motor crank using pry lever 80-200 or appropriate screwdriver.



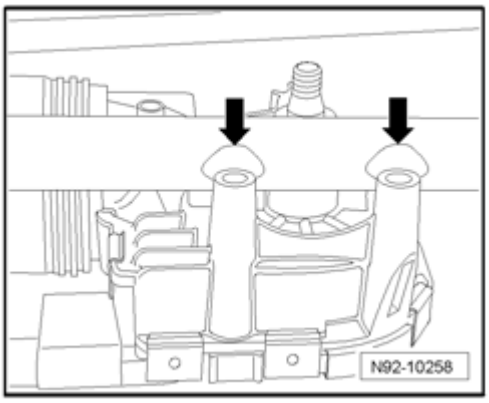
- Remove nut **- 1 -** .

- Remove motor crank **- 2 -** from wiper motor shaft.

- Remove screws **- arrows -** and remove retainer bracket **- 3 -** .

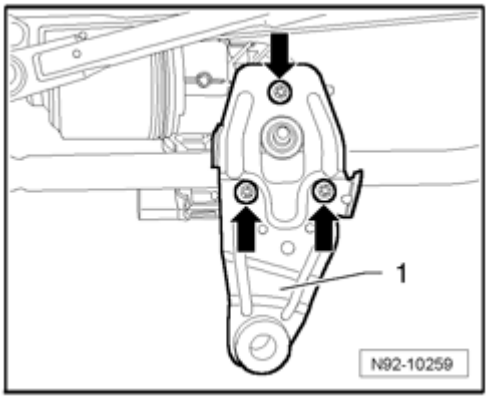
- Remove wiper motor with control module out from below wiper frame.

Wiper motor, installing to wiper frame



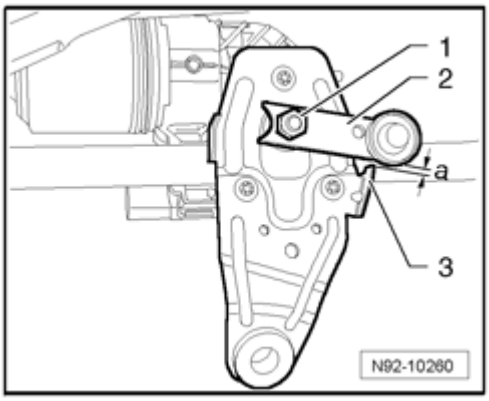
- Insert wiper motor with control module into recesses **-**

arrows - (linkage appropriate), into wiper frame.



- Install retainer frame - **1** - and fasten with screws - **arrows** - .

- Tighten screws - **arrows** - according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .



- Place motor crank - **2** - onto wiper motor shaft.

Wiper frame retainer brackets come in different versions from 2 suppliers.

- Determine version by observing supplier imprint in retainer frame.

- Adjust gap dimension - **a** - between retainer frame stop - **3** - and motor crank - **2** - according to the following:

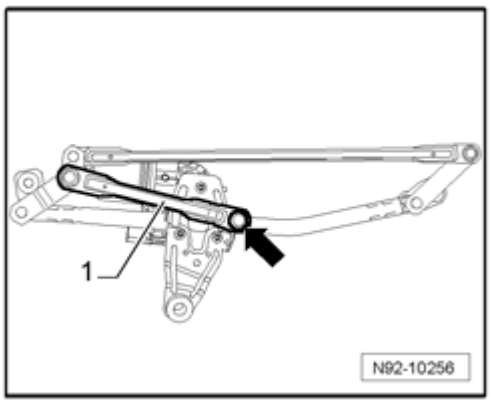
- Supplier - Bosch: Dimension - **a** - = 2.7 mm

- Supplier - Mitsuba: Dimension - **a** - = 6.4 mm

- Install crank onto wiper motor drive and secure with nut - **1** - .

- Tighten nut - **1** - to value specified in table ⇒ 92-8, Windshield Wiper and Washer System, tightening

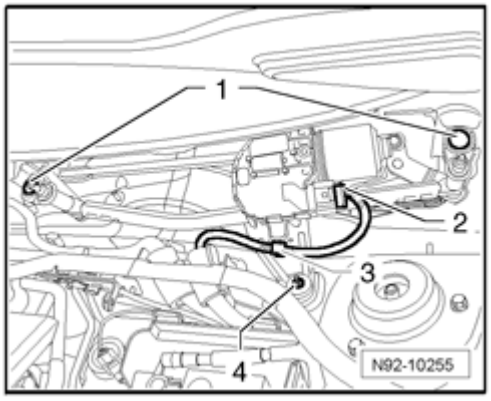
torques .



- Press ball head **- arrow -** of linkage **- 1 -** onto crank.

Windshield wiper assembly, installing

- Install wiper assembly in vehicle.



- Install upper screws **- 1 -** .

- Install lower nut with washer **- 4 -** .

- Torque all fasteners according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

- Reconnect and lock electrical connection **- 2 -** to wiper motor.

- Clip harness retainer **- 3 -** into wiper frame bracket.

- Install plenum chamber cover and gasket in reverse order of removal.

- Reconnect battery ⇒ 27-4, Battery, disconnecting and reconnecting .

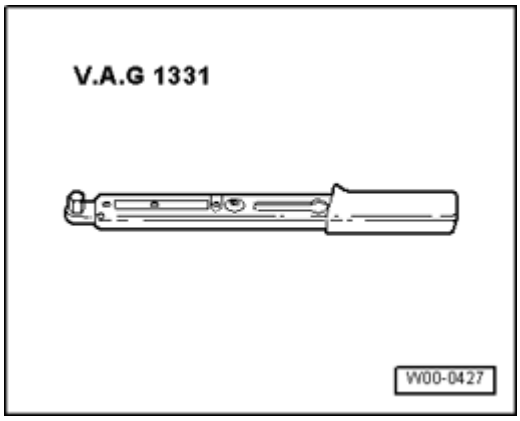
- Install wiper arms ⇒ 92-1, Wiper arms, removing and installing .

Windshield wipers, checking

Windshield wiper function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" ⇒ 97-6, Vehicle Electrical System Control Module J519 , Output Diagnostic Test Mode (DTM) .

Wiper arms, removing and installing

Special tools, testers and auxiliary items required



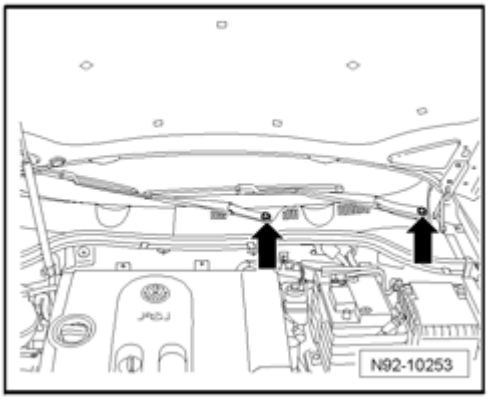
- Torque wrench VAG 1331 (or 5 - 50 Nm equivalent)

Removing:

Wiper arms, removing ⇒ 92-1, Wiper arms, removing .

Installing:

Note:



- *Tighten wiper arm nuts* ***- arrows -*** *only after adjusting windshield wiper park position.*

- Operate wipers briefly and allow to return to park position.

- Do this by switching ignition on and briefly operating wiper stalk downward (touch wipe).

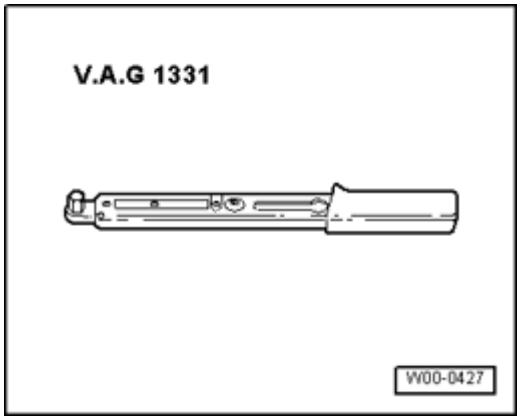
- After wiper motor stops, switch ignition off.

- Place the wiper arms onto the shafts in the approximate park position and tighten the nuts **- arrow -** by hand.

- Adjust the windshield wiper blade park position ⇒ 92-1, Wiper blade park position, adjusting .

Wiper blade park position, adjusting

Special tools, testers and auxiliary items required



- Torque wrench VAG 1331/ (or 5 - 50 Nm equivalent)

Note:

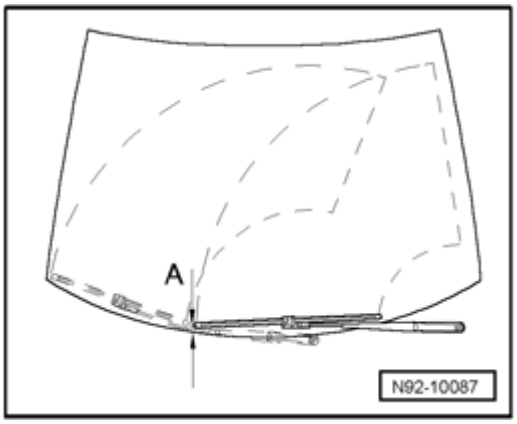
- *Wiper blades are arranged symmetrically for Right-Hand Drive vehicles.*

- Deactivate APP function ⇒ 92-1, Windshield Wiper - Alternating Park Position (APP) function, deactivating .

- Operate wipers briefly and allow to return to park position. Switch ignition off.

- Now set the park positions of the windshield wiper blades.

Driver side:



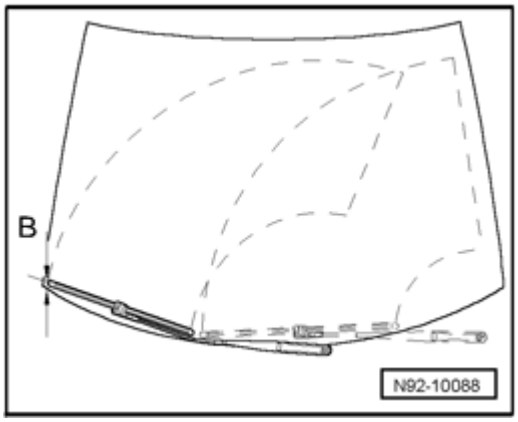
Gap dimension **- A -** between center of wiper blade lower edge of the windshield must be 39 mm.

- If necessary, set park position of windshield wiper blades by offsetting wiper arms.

Wiper arms, removing ⇒ 92-1, Wiper arms, removing .

- Install and torque nuts according to values in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

Passenger side:



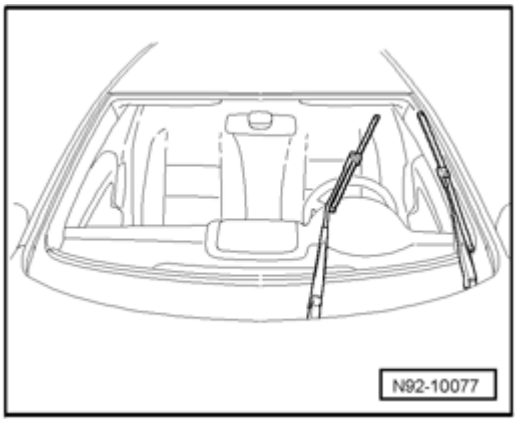
Gap dimension **- B -** between wiper blade and lower edge of windshield must be 14 mm.

- If necessary, set park position of windshield wiper blades by offsetting wiper arms.

Wiper arms, removing ⇒ 92-1, Wiper arms, removing .

- Install and torque nuts according to values in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

"Aero-wiper" blades, removing and installing



To remove wiper blades, wiper arms must be driven into "service/winter position" . The "service/winter position" is activated by operating windshield wiper lever in "touch wipe" position within 10 seconds after switching off ignition.

Additional information ⇒ *Owners manual*

Removing:

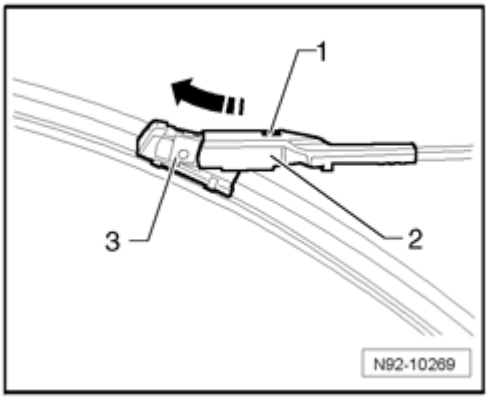
Caution!

- ***Driver and passenger wiper blades are different lengths. Damage will result if wiper blades are interchanged.***

- ***Aero-wipers are very flexible. Grasp wiper blades only in area of wiper blade mount to lift them off front windshield.***

- Bring wiper arms into "service/winter position" .

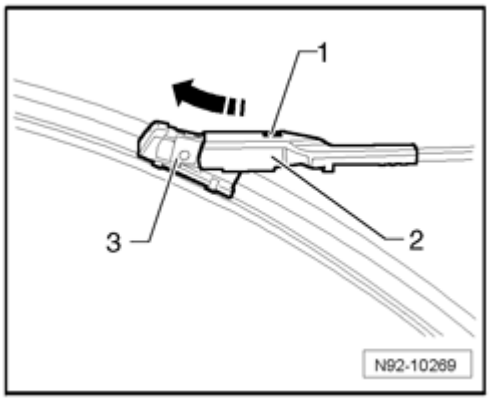
- Fold up wiper arm.



- Depress retainer **- 1 -** and pull wiper blade mounting **- 3**
- until wiper arm stop **- 2 -** is reached.

- Tilt wiper blade as illustrated and pull wiper blade

mounting **- 3 -** in direction of arrow from wiper arm **- 2 -** .



Installing:

- Slide wiper blade mounting **- 3 -** onto wiper arm up to stop **- 2 -** .

- Ensure secure engagement of retainer **- 1 -** in wiper arm **- 2 -** .

- Carefully fold wiper arm back onto windshield, noting CAUTION above.

Rain/Light Recognition Sensor G397 , removing and installing

Should an intact Rain/Light Recognition Sensor G397 be removed from the retainer plate on the windshield (for example, when the windshield is replaced), it can be reused. Prior to reuse, ensure the Rain/Light Recognition Sensor G397 is stored in a dust-free area, and that the mounting surfaces are not damaged or dirty.

Removing:

Caution!

- ***Switch off all electrical consumers.***

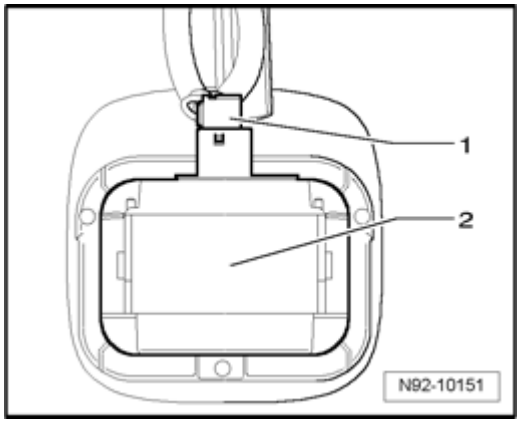
- ***Switch ignition off and remove ignition key.***

- Remove interior mirror

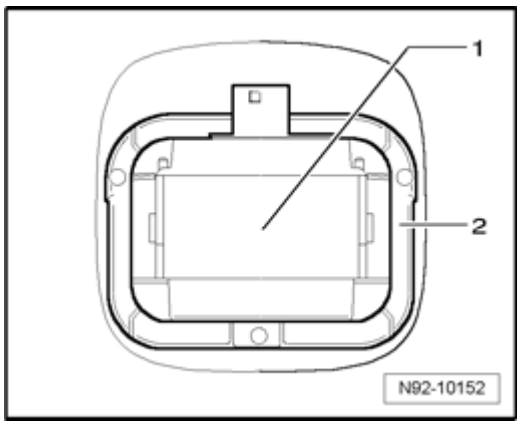
⇒ *Repair Manual, Body Interior, Repair Group 68, Interior mirror, removing and installing*

.

- Unclip harness cover routed over Rain/Light Recognition Sensor G397 .



- Disconnect electrical connection **- 1 -** from Rain/Light Recognition Sensor G397 **- 2 -** .



- Using a screwdriver, pry Rain/Light Recognition Sensor G397 **- 1 -** out of bracket **- 2 -** on windshield.

Note:

- *While removing, the complete Rain/Light Recognition Sensor G397 and not only the upper shell of the sensor must be pried off.*

Installing:

Install in reverse order of removal, noting the following:

- The windshield surface inside the sensor retainer frame must be thoroughly cleaned using isopropyl alcohol prior to installing sensor.

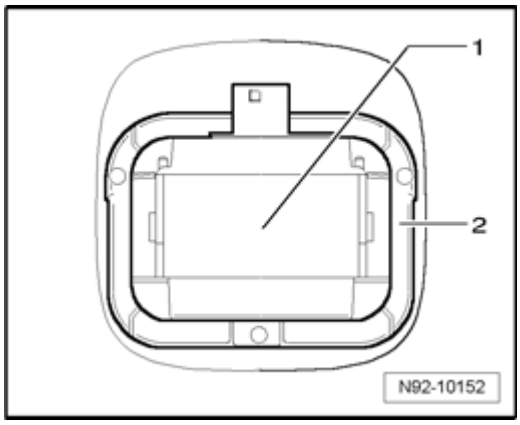
- Where applicable, remove cover from new Rain/Light Recognition Sensor G397 .

Note:

- *Ensure Rain/Light Recognition Sensor G397 optical*

receptor is kept clean and free from contaminants (dust particles, dirt etc.) while installing.

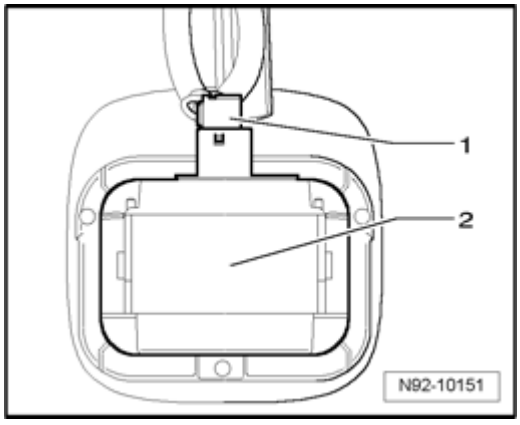
- *If the surface (connecting pads) of Rain/Light Recognition Sensor G397 is soiled, it can be potentially cleaned by "applying" and then "pulling off" one or more adhesive strips.*



- Insert sensor **- 1 -** into retainer plate **- 2 -** on windshield, and press securely.

Note:

- *After installing Rain/Light Recognition Sensor G397 , there must be no air bubbles between windshield and optical receptor.*



- Connect electrical connection **- 1 -** an secure sensor **- 2 -** by installing harness cover.

92 - 2

Windshield Washer System

General information

Note:

- *Windshield washer function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" .*

- *Additional information:*

⇒ *Owners Manual*

⇒ *Self Study Program - Course Number 891503 "The 2006 Passat Introduction"*

⇒ *Self Study Program - Course Number 871503 "The 2006 Passat Electrical Systems Design and Function"*

⇒ *Electrical Wiring Diagrams, Troubleshooting and Component Locations binder*

CAN-Bus wire repairs ⇒ 97-8, Repairing CAN-Bus wires

On Board Diagnostic (OBD), function

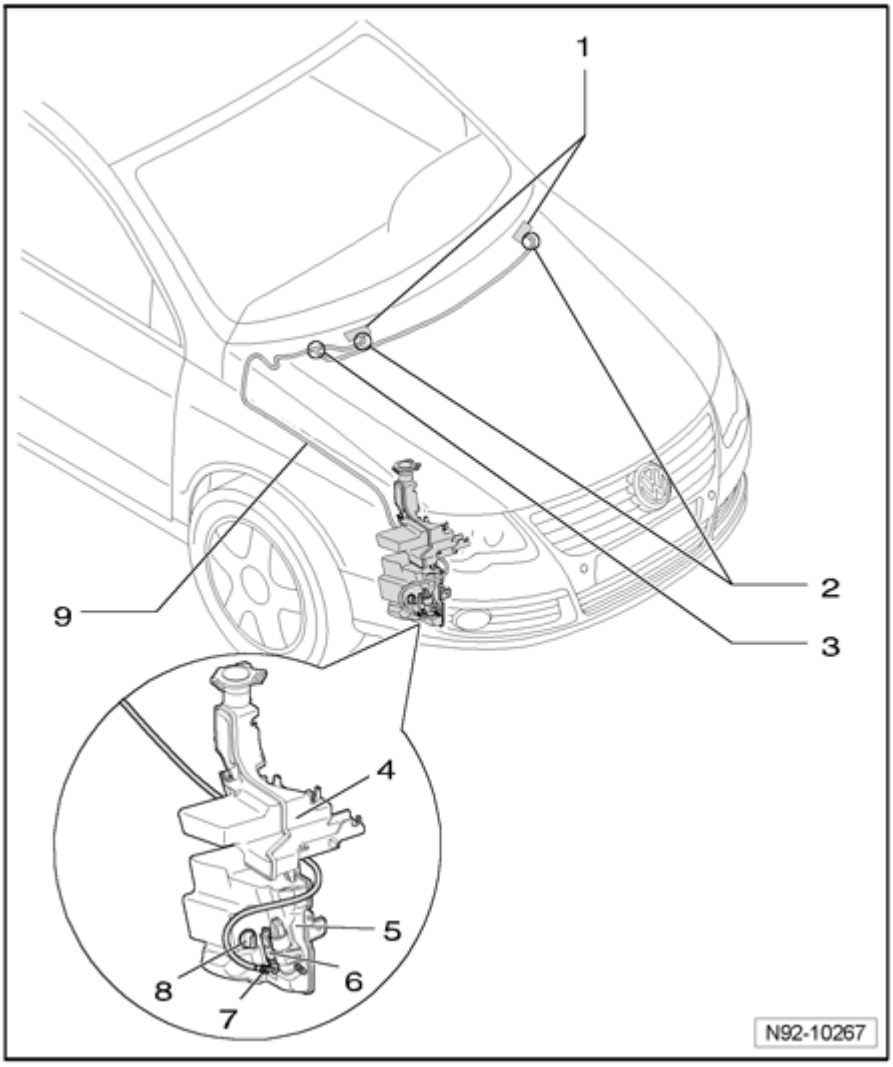
Vehicle electrical system control is equipped with On Board Diagnostics (OBD) capabilities which assists in troubleshooting.

For troubleshooting, use Vehicle Diagnostic, Testing and Information System VAS 5051/5052 in operating mode "Guided Fault Finding" .

Windshield washer system, component overview

Note:

- *Depending on equipment level and market version, the washer fluid reservoir is configured as either a single or dual design. The following illustrations depict the dual version for windshield and headlamp washer systems.*



- **Windshield washer jets**
  - Removing and installing ⇒ 92-2, Windshield washer jets, removing and installing
  - Adjusting ⇒ 92-2, Windshield washer jets, adjusting
- **Angle coupling**
  - Washer hose coupling to windshield washer jet
  - Washer hose couplings, overview ⇒ 92-6, Washer Hose Couplings
- **Y-piece**

- Routes washer hose to windshield washer jets

- **Washer fluid reservoir, upper part**
  - Removing and installing ⇒ 92-2, Upper washer fluid reservoir, removing and installing
  - Single version washer fluid reservoir, removing and installing ⇒ 92-2, Single design washer fluid reservoir, removing and installing .

- **Washer fluid reservoir, lower part**
  - Removing and installing ⇒ 92-2, Lower washer fluid reservoir, removing and installing

- **Windshield Washer Pump V5**
  - Windshield and Rear Window Washer Pump V59 (wagon)
  - Removing and installing ⇒ 92-2, Windshield Washer Pump V5 - Windshield and Rear Window Washer Pump V59 , removing and installing
  - Windshield and Rear Window Washer Pump V59 checking ⇒ 97-6, Vehicle Electrical System Control Module J519 , Output Diagnostic Test Mode (DTM)

- **Angle coupling**
  - Coupling for Windshield Washer Pump V5

- Washer hose couplings, overview ⇒ 92-6, Washer Hose Couplings

- **Windshield Washer Fluid Level Sensor G33**
  - Removing and installing ⇒ 92-2, Windshield Washer Fluid Level Sensor G33 , removing and installing

- **Hose**
  - Hose repair ⇒ 92-7, Washer Hoses, repairing

Washer fluid reservoir, removing and installing

Depending on equipment level and market version, the washer fluid reservoir is configured as either a single or dual design.

Vehicles without headlamp washer system use a single design washer fluid reservoir.

- Single design washer fluid reservoir, removing and installing ⇒ 92-2, Single design washer fluid reservoir, removing and installing . .

Vehicles with headlamp washer system use a dual design washer fluid reservoir.

- Upper washer fluid reservoir, removing and installing ⇒ 92-2, Upper washer fluid reservoir, removing and installing

- Lower washer fluid reservoir, removing and installing ⇒ 92-2, Lower washer fluid reservoir, removing and installing

Single design washer fluid reservoir, removing and installing .

Note:

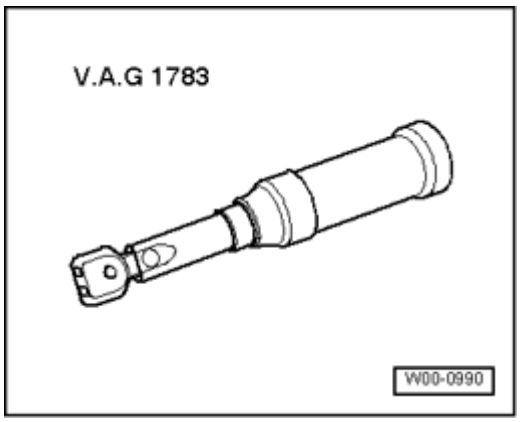
- *The following illustrations depict the washer fluid reservoir on sedan models, including Windshield*

Washer Pump V5 . On wagon models, the Windshield and Rear Window Washer Pump V59 is used in conjunction with two hose couplings.

Note:

- *In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump V59 , connections at pump and hose lines are color-coded. Hose connector pieces must be connected to the corresponding colored pump connections during installation.*

Special tools, testers and auxiliary items required



- Torque Wrench (5-60 Nm) VAG 1783 (or equivalent)

Removing:

Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper, removing and installing bumper cover*

.

- Remove right front wheel housing liner

⇒ *Repair Manual, Body Exterior, Repair Group 66, Wheel housing liner, removing and installing*

.

- Remove right headlamp ⇒ 94-1, Headlamps, removing and installing .

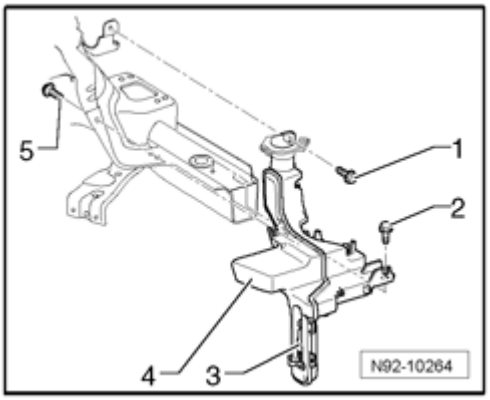
- Bring lock carrier into service position

⇒ *Repair Manual, Body Exterior, Repair Group 50, Lock carrier service position*

.

- Loosen fuel filter retainer and set aside fuel filter with lines attached.

- Unclip all hoses from washer fluid reservoir.



- Remove screw **- 1 -** .

- Remove screw **- 2 -** .

Note:

- *Depending on equipment, it may be necessary to loosen the upper hose retainer in order to better access screw **- 2 -** .*

- Access and remove screw **- 5 -** from within wheel housing.

- Remove washer hose coupling from Windshield Washer Pump V5 **- 3 -** and retain washer fluid in an appropriate container.

- Release and disconnect electrical connection at Windshield Washer Pump V5 **- 3 -** .

- Remove washer fluid reservoir **- 4 -** upward from vehicle.

Installing:

Install in reverse order of removal, noting the following:

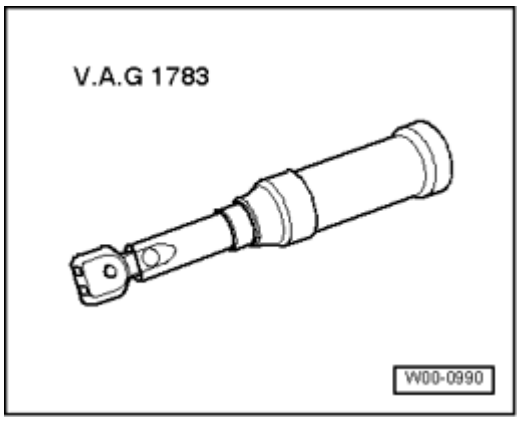
Note:

- *When installing washer fluid reservoir, ensure all hoses are routed without being pinched or kinked, and that they are clipped into the corresponding locations on the reservoir.*

- Torque all fasteners according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

Upper washer fluid reservoir, removing and installing

Special tools, testers and auxiliary items required



- Torque Wrench (5-60 Nm) VAG 1783 (or equivalent)

Removing:

Caution!

- ***Switch off all electrical consumers.***

- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper, removing and installing bumper cover*

.

- Remove right front wheel housing liner

⇒ *Repair Manual, Body Exterior, Repair Group 66, Wheel housing liner, removing and installing*

.

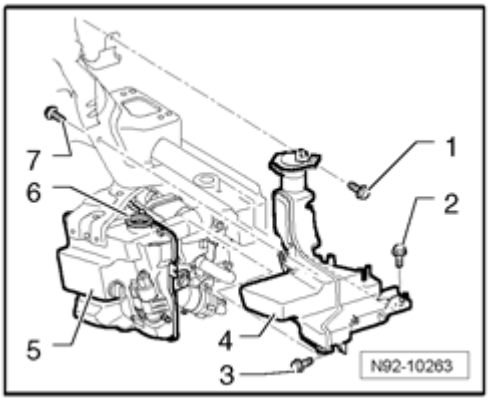
- Remove right headlamp ⇒ 94-1, Headlamps, removing and installing .

- Bring lock carrier into service position

⇒ *Repair Manual, Body Exterior, Repair Group 50, Lock carrier service position*

.

- Loosen fuel filter retainer and set aside fuel filter with lines attached.



- Unclip all hoses from upper portion **- 4 -** of washer fluid reservoir.

- Remove screws **- 1 -** , **- 2 -** and **- 3 -** .

Note:

- *Depending on equipment, it may be necessary to loosen the upper hose retainer in order to better access screw **- 2 -** .*

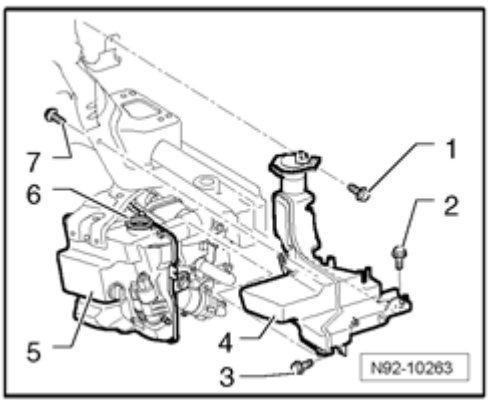
- Access and remove screw **- 7 -** from within wheel housing.

- Pull upper reservoir **- 4 -** straight up and out from rubber grommet **- 6 -** in lower reservoir **- 5 -** .

- Remove upper reservoir from vehicle.

Installing:

Install in reverse order of removal, noting the following:



- Insert upper reservoir **- 4 -** straight downward into rubber grommet **- 6 -** in lower reservoir.

Note:

- *To aid in assembling upper and lower reservoir sections, apply a water soluble lubricant to rubber grommet **- 6 -** .*

- *When installing upper washer fluid reservoir, ensure all hoses are routed without being pinched or kinked, and that they are clipped into the corresponding locations on the reservoir.*

- Torque all fasteners according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Lower washer fluid reservoir, removing and installing

Note:

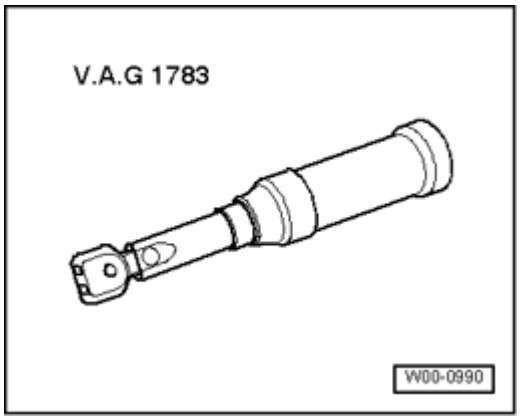
- *The following illustrations depict the washer fluid reservoir on sedan models, including Windshield*

Washer Pump V5 . On wagon models, the Windshield and Rear Window Washer Pump V59 is used in conjunction with two hose couplings.

Note:

- *In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump V59 , connections at pump and hose lines are color-coded. Hose connector pieces must be connected to the corresponding colored pump connections during installation.*

Special tools, testers and auxiliary items required



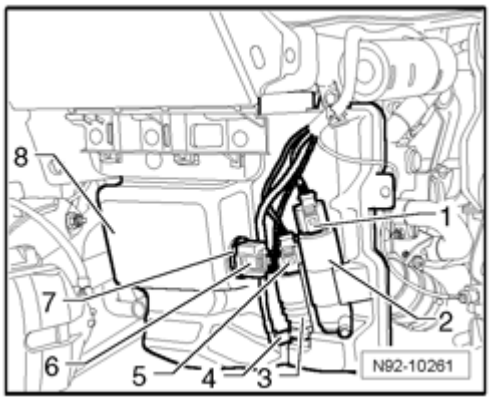
- Torque Wrench (5-60 Nm) VAG 1783 (or equivalent)

Removing:

Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Remove upper washer fluid reservoir ⇒ 92-2, Upper washer fluid reservoir, removing and installing .



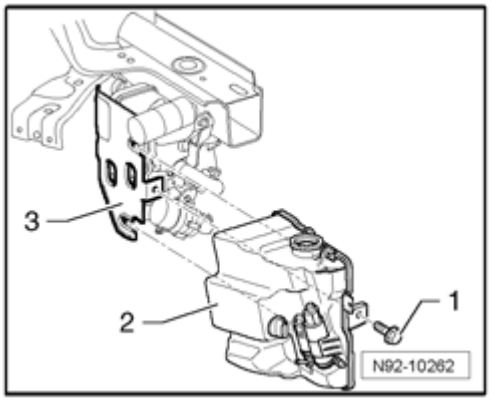
- Unclip all hoses from lower portion **- 8 -** of washer fluid reservoir.

- Release and disconnect electrical connection **- 1 -** at Headlamp Washer Pump V11 **- 2 -** .

- Release and disconnect electrical connection **- 5 -** at Windshield Washer Pump V5 **- 3 -** .

- Release and disconnect electrical connection **- 6 -** at Windshield Washer Fluid Level Sensor G33 **- 7 -** .

- Remove washer hose coupling **- 4 -** from Windshield Washer Pump V5 **- 3 -** and retain washer fluid in an appropriate container.

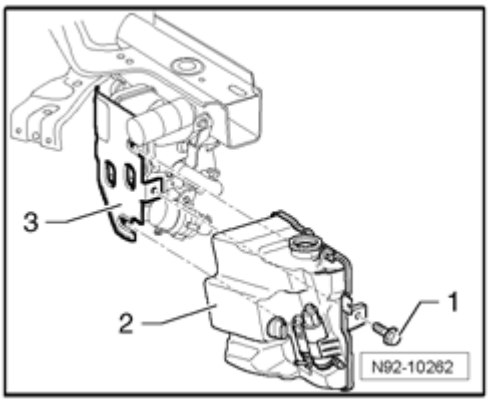


- Remove screw **- 1 -** for lower washer fluid reservoir **- 2 -** .

- Pull lower washer reservoir **- 2 -** to front and out of retainer **- 3 -** .

Installing:

Install in reverse order of removal, noting the following:



Ensure guide on lower washer reservoir **- 2 -** is inserted into retainer **- 3 -** .

- Torque all fasteners according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

- Install upper washer fluid reservoir ⇒ 92-2, Upper washer fluid reservoir, removing and installing .

- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Windshield Washer Pump V5 - Windshield and Rear Window Washer Pump V59 , removing and installing

Note:

- *The following illustrations depict the dual washer fluid reservoir on sedan models, including Windshield Washer Pump V5 . On wagon models, the Windshield and Rear Window Washer Pump V59 is used in conjunction with two hose couplings. Removal and installation of Windshield and Rear Window Washer Pump V59 is the same.*

Note:

- *In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump V59 , connections at pump and hose lines are color-coded. Hose connector pieces must be connected to the corresponding colored pump connections during installation.*

Removing:

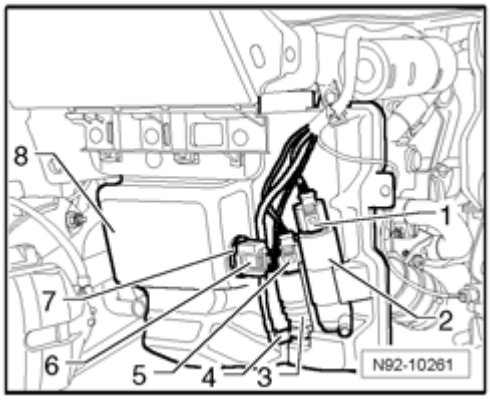
Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper*

.



- Remove washer hose coupling **- 4 -** from Windshield Washer Pump V5 **- 3 -** and retain washer fluid in an appropriate container.

- Pull Windshield Washer Pump V5 **- 3 -** upward out of tank and disconnect harness connector **- 5 -** .

Installing:

Install in reverse order of removal, noting the following:

- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Windshield and Rear Window Washer Pump V59 checking

Windshield and Rear Window Washer Pump V59 function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" ⇒ 97-6, Vehicle Electrical System Control Module J519 , Output Diagnostic Test Mode (DTM) .

Windshield Washer Fluid Level Sensor G33 , removing and installing

The Windshield Washer Fluid Level Sensor G33 is installed on washer fluid reservoir in right wheel housing.

Removing:

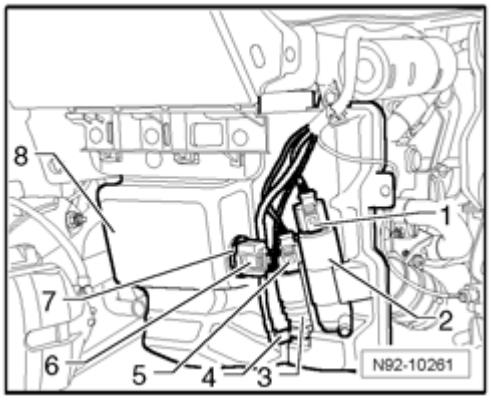
Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper*

.



- Release and disconnect electrical connection **- 6 -** at Windshield Washer Fluid Level Sensor G33 **- 7 -** .

- Pull Windshield Washer Fluid Level Sensor G33 **- 7 -** out from rubber grommet.

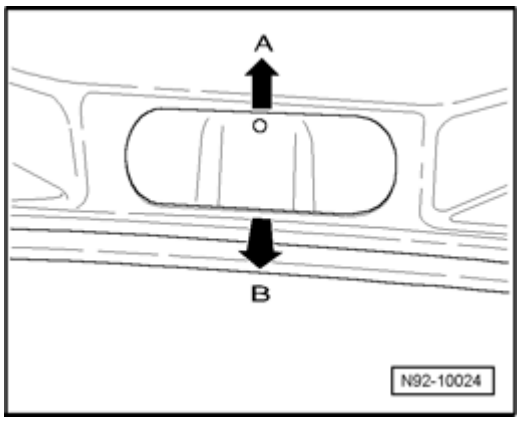
Installing:

Install in reverse order of removal, noting the following:

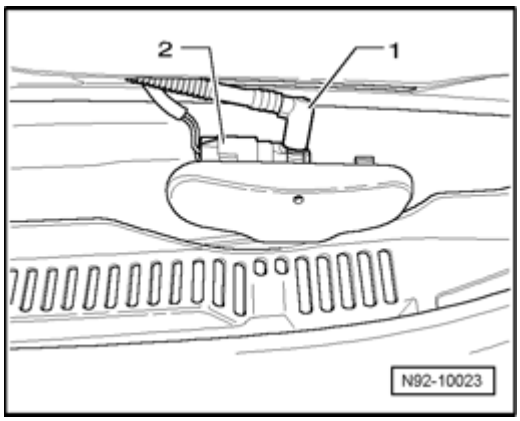
- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Windshield washer jets, removing and installing

Removing:



- Press nozzle upward **- arrow A -** and pull down out of front hood **- arrow B -** .



- Disconnect hose **- 1 -** and disconnect electrical connector from heated spray jet **- 2 -** (where applicable).

Installing:

- Connect hose and electrical connection (where applicable).

- Slide spray jet into installation opening until it engages audibly.

- Adjust spray jets ⇒ 92-2, Windshield washer jets, adjusting .

Windshield washer jets, adjusting

Caution!

- ***Potential for damage.***
- ***The washer jet can be damaged.***
- ***Do not use solid objects to clean washer jets!***

Note:

- *In the event contamination in spray jet produces an uneven spray pattern, remove spray jet and rinse it with water in the opposite direction of spray. It is permissible to further blow through in opposite direction of spray with compressed air. Do not use solid objects to clean washer jets!*

Windshield washer jets, adjusting

⇒ *Repair Manual, Maintenance, Repair Group 00,*

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Rear Window Wiper System

General information

Note:

- *Rear window wiper function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" .*

- *Additional information:*

⇒ *Owners Manual*

⇒ *Self Study Program - Course Number 891503 "The 2006 Passat Introduction"*

⇒ *Self Study Program - Course Number 871503 "The 2006 Passat Electrical Systems Design and Function"*

⇒ *Electrical Wiring Diagrams, Troubleshooting and Component Locations binder*

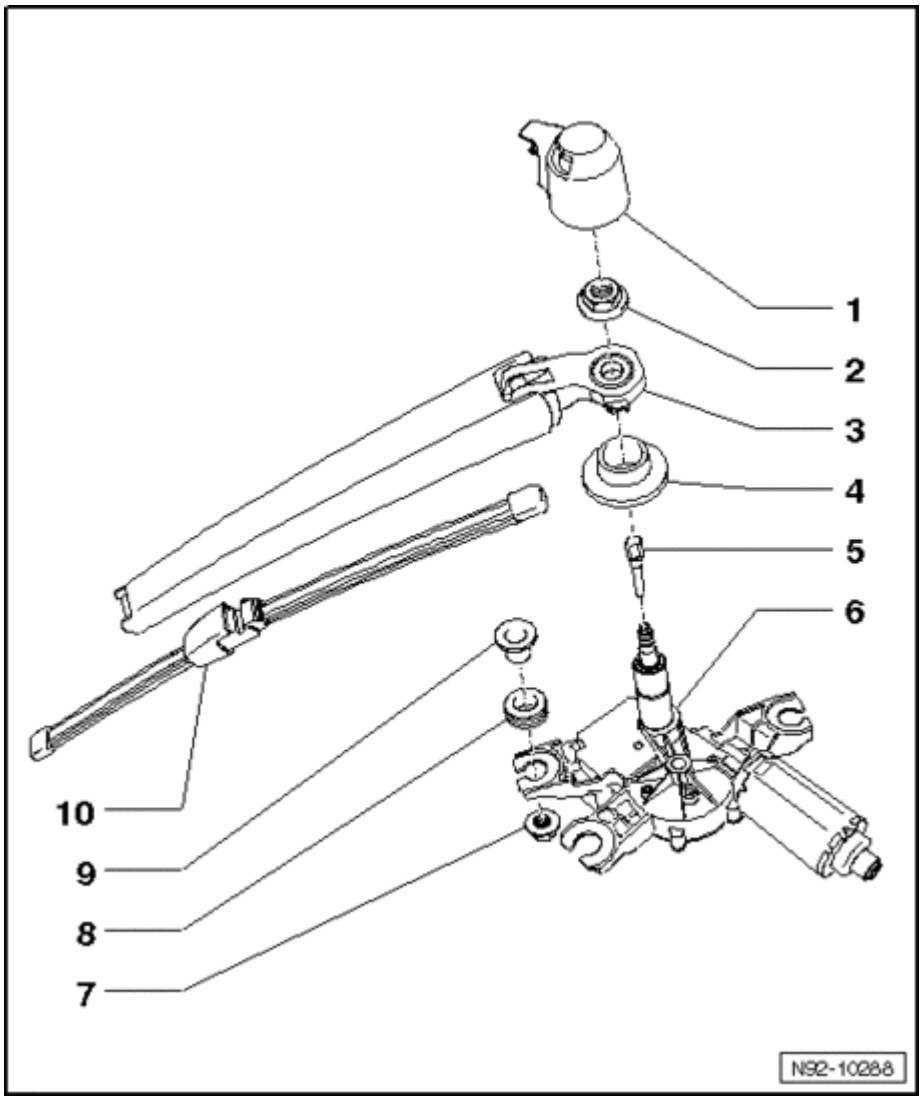
CAN-Bus wire repairs ⇒ 97-8, Repairing CAN-Bus wires

On Board Diagnostic (OBD), function

Vehicle electrical system control is equipped with On Board Diagnostics (OBD) capabilities which assists in troubleshooting.

For troubleshooting, use Vehicle Diagnostic, Testing and Information System VAS 5051/5052 in operating mode "Guided Fault Finding" .

Rear window wiper system, component overview



1 - Cap

2 - Nut (SW 13)

- 12 Nm

3 - Wiper arm

- Removing ⇒ 92-3, Rear window wiper arm, removing
- Installing ⇒ 92-3, Rear window wiper arm, installing
- Rear wiper blade park position, adjusting ⇒ 92-3, Rear wiper blade park position, adjusting

4 - Gasket

5 - Rear window washer jet

- Replacing ⇒ 92-4, Rear window

washer jet, replacing

- Adjusting ⇒ 92-4, Rear window washer jet, adjusting

6 - Rear Window Wiper Motor V12

- Removing and installing ⇒ 92-3, Rear Window Wiper Motor V12 , removing and installing

7 - Nut M6

- 8 Nm

8 - Rubber isolator

9 - Spacer

10 - Wiper blade

- Removing and installing ⇒ 92-3, Aero-wiper blades, removing and installing

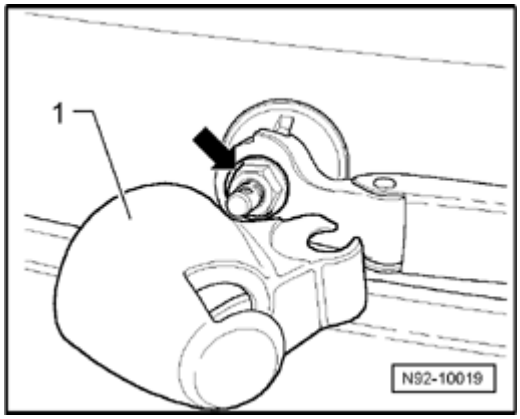
Rear window wiper assembly, removing

Rear window wiper arm, removing

- Switch ignition on and momentarily activate rear wiper in order to ensure wiper returns to park position.

Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***



- Fold back cap - **1** - and unclip from wiper arm.

- Loosen nut **- arrow -** , do not remove.

Caution!

Aero-wipers are very flexible. Grasp wiper blades only in area of wiper blade mount to lift them from rear window.

- Lift wiper arm and loosen by gently rocking back and forth on shaft until felt to release.

- Remove nut **- arrow -** and remove wiper arm.

Rear Window Wiper Motor V12 , removing and installing

Caution!

When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified in this Repair Manual ⇒ 27-4, Battery, disconnecting and reconnecting .

Removing:

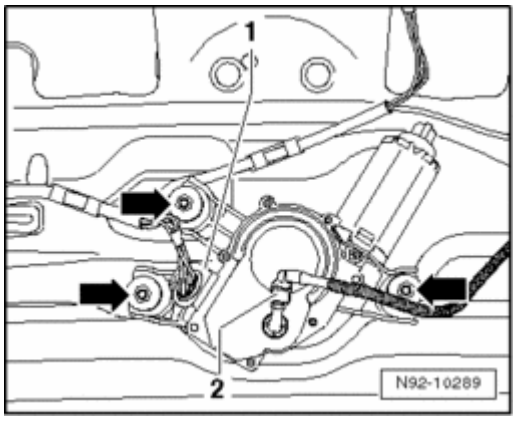
Remove rear wiper arm ⇒ 92-3, Rear window wiper arm, removing .

- Disconnect battery ⇒ 27-4, Battery, disconnecting and reconnecting .

- Remove rear lid trim

⇒ *Repair Manual, Body Interior, Repair Group 70, Rear lid trim; Rear lid trim (Wagon), removing and installing*

.



- Release and disconnect electrical connection **- 1 -** .

- Release and disconnect hose coupling **- 2 -** by pulling up on securing ring, and remove hose from motor.

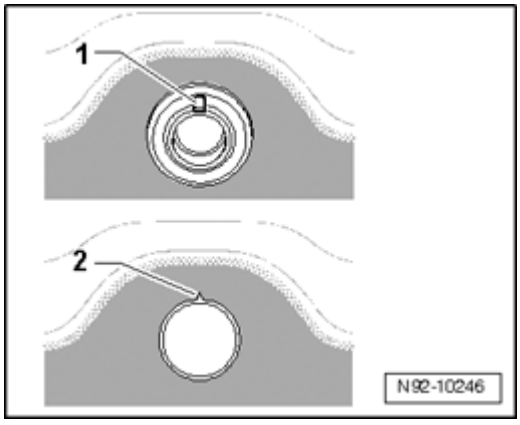
- Remove nuts **- arrows -** .

- Carefully remove motor from rear lid.

Installing:

Install in reverse order of removal, noting the following:

- Where necessary, coat gasket with a suitable lubricant to aid in installation.



- Ensure correct fitting and orientation of gasket. Position mark **- 1 -** on gasket must align with mark **- 2 -** in rear window.

- Reconnect battery ⇒ 27-4, Battery, disconnecting and reconnecting .

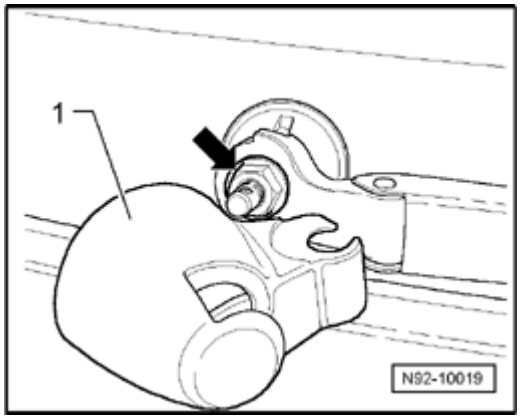
Rear window wiper arm, installing

- Switch ignition on and momentarily activate rear wiper in order to ensure wiper motor returns to park position.

Caution!

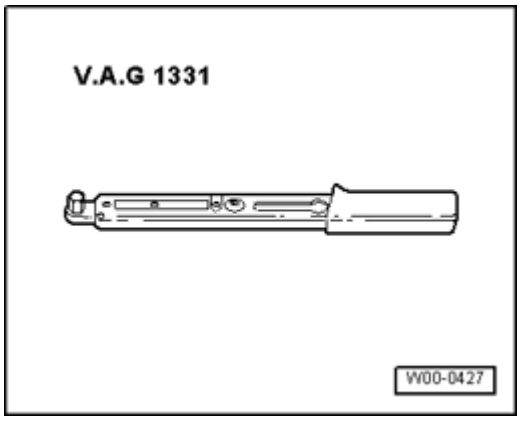
- ***Switch off all electrical consumers.***

- ***Switch ignition off and remove ignition key.***



- Place the wiper arm onto the shaft in the approximate park position and tighten the nut **- arrow -** by hand.

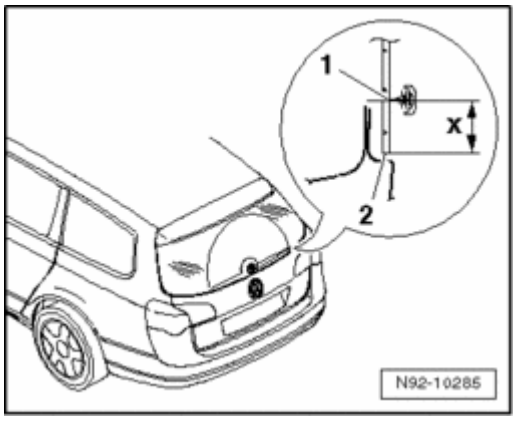
- Adjust rear wiper blade park position ⇒ 92-3, Rear wiper blade park position, adjusting .



Rear wiper blade park position, adjusting

Special tools, testers and auxiliary items required

- Torque wrench VAG 1331 (or 5 - 50 Nm equivalent)



Gap dimension **- x -** between wiper blade **- 1 -** and lower edge of rear window **- 2 -** must be 23 mm.

- If necessary, set park position of windshield wiper blade by offsetting wiper arm.

Wiper arm, removing ⇒ 92-3, Rear window wiper arm, removing .

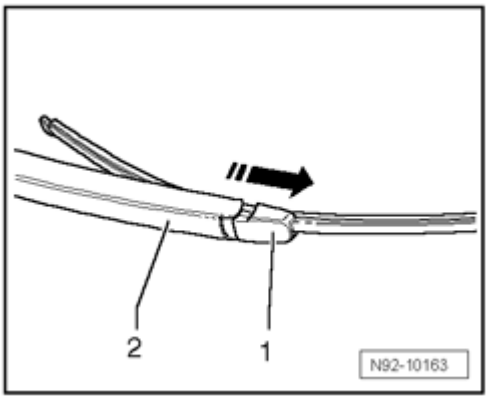
- Install and torque nut according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

"Aero-wiper" blades, removing and installing

Caution!

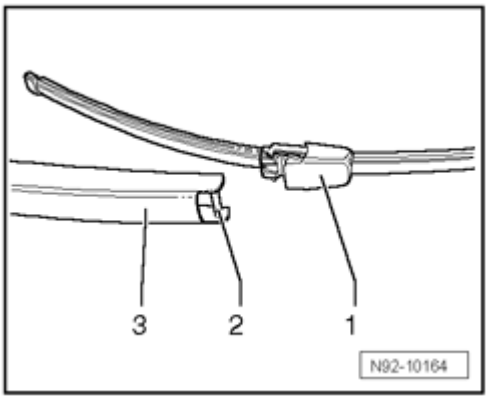
Aero-wipers are very flexible. Grasp wiper blades only in area of wiper blade mount to lift them from window.

Removing:



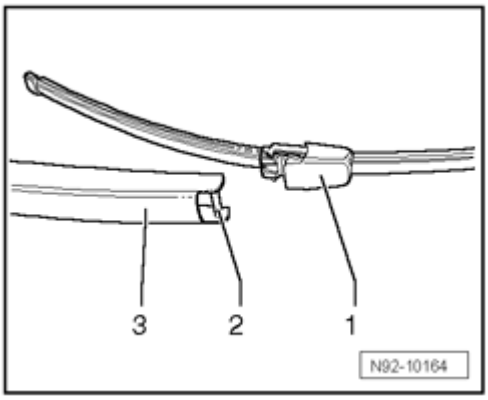
- Fold up wiper arm **- 2 -** .

- Release wiper blade mounting **- 1 -** from wiper arm **- 2 -** in direction of **- arrow -** .



- Separate wiper blade mounting **- 1 -** from pivot **- 2 -** on wiper arm.

Installing:



- Insert wiper arm mounting **- 1 -** on wiper arm pivot **- 2 -** .
- Engage wiper arm mounting fully onto wiper arm.
- Carefully fold wiper arm/blade onto rear window.

92 - 4

Rear Window Washer System

General information

Note:

- *Rear window washer function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" .*

- *Additional information:*

⇒ *Owners Manual*

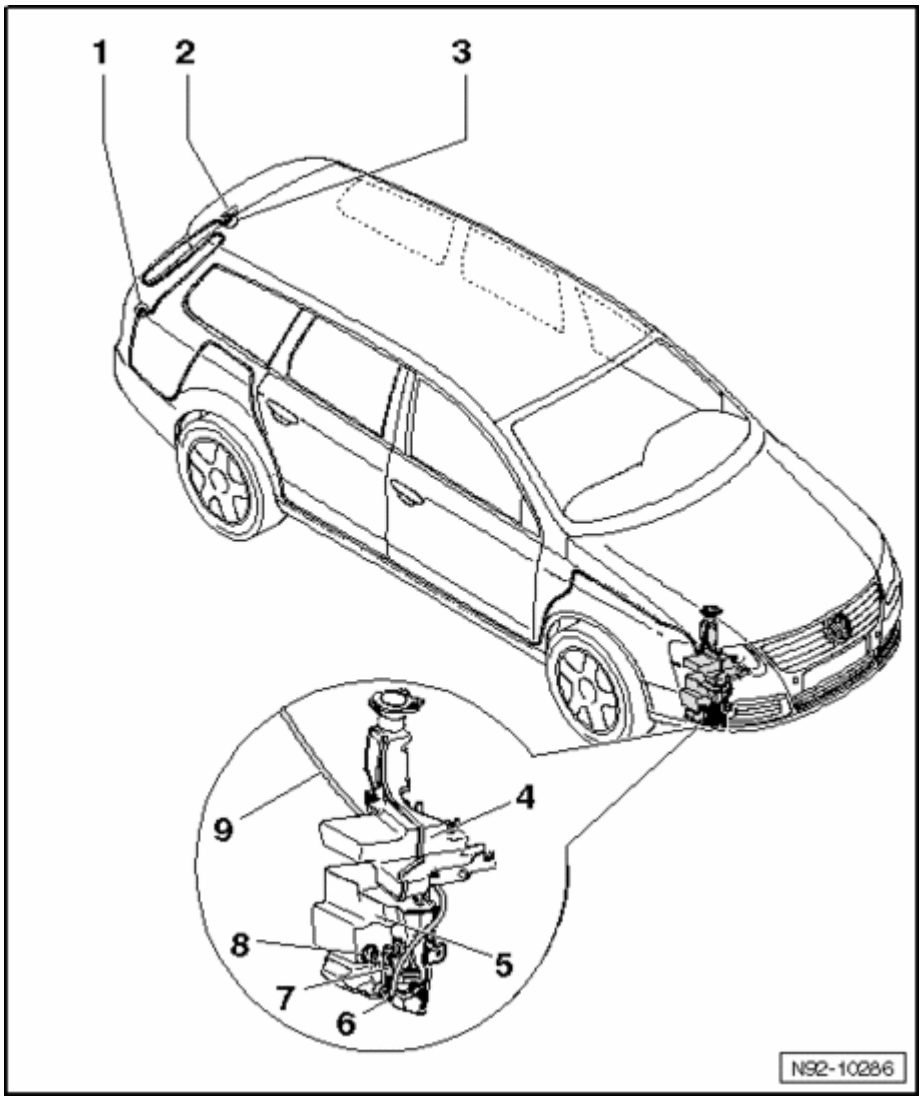
⇒ *Self Study Program - Course Number 891503 "The 2006 Passat Introduction"*

⇒ *Self Study Program - Course Number 871503 "The 2006 Passat Electrical Systems Design and Function"*

⇒ *Electrical Wiring Diagrams, Troubleshooting and Component Locations binder*

CAN-Bus wire repairs ⇒ 97-8, Repairing CAN-Bus wires

Rear window washer system, component overview



- **Angle coupling**
  - Hose disconnect point between rear lid and body
  - Washer hose couplings, overview ⇒ 92-6, Washer Hose Couplings
- **Rear window washer jet**
  - Replacing ⇒ 92-4, Rear window washer jet, replacing
  - Adjusting ⇒ 92-4, Rear window washer jet, adjusting
- **Angle coupling**

- Connection at rear window washer jet
- Washer hose couplings, overview ⇒ 92-6, Washer Hose Couplings

- **Upper washer fluid reservoir**
  - Removing and installing ⇒ 92-2, Upper washer fluid reservoir, removing and installing .
  - Single design washer fluid reservoir, removing and installing ⇒ 92-2, Single design washer fluid reservoir, removing and installing .

- **Lower washer fluid reservoir**
  - Removing and installing ⇒ 92-2, Lower washer fluid reservoir, removing and installing .

- **Angle coupling**
  - Hose connection to Windshield and Rear Window Washer Pump V59
  - Washer hose couplings, overview ⇒ 92-6, Washer Hose Couplings

- **Windshield and Rear Window Washer Pump V59**
  - Removing and installing ⇒ 92-2, Windshield Washer Pump V5 - Windshield and Rear Window Washer Pump V59 , removing and installing .

- **Windshield Washer Fluid Level Sensor G33**

- Removing and installing ⇒ 92-2, Windshield Washer Fluid Level Sensor G33 , removing and installing

- **Washer hose**
  - Repairing ⇒ 92-7, Washer Hoses, repairing

Rear window washer jet, replacing

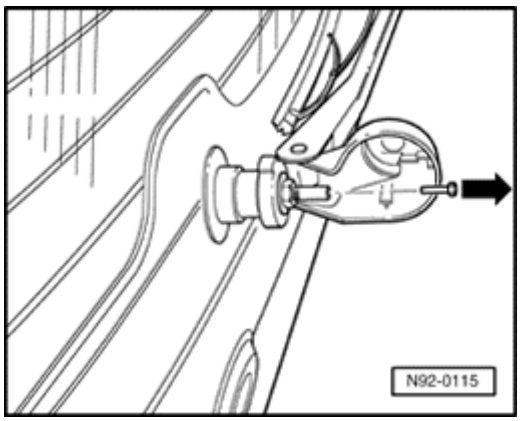
Removing:

- Switch ignition on and momentarily activate rear wiper in order to ensure wiper returns to park position.

Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Fold back cap from wiper arm mounting.



- Use appropriate pliers to pull washer jet out from wiper shaft **- arrow -** .

Installing:

- Insert washer jet with (spray jet opening facing upwards) into wiper shaft as far as possible.

- Adjust washer jet ⇒ 92-4, Rear window washer jet, adjusting .

Rear window washer jet, adjusting

Caution!

- ***Potential for damage.***
- ***The washer jet can be damaged.***
- ***Do not use solid objects to clean washer jets!***

Note:

- *In the event contamination in spray jet produces an uneven spray pattern, remove spray jet and rinse it with water in the opposite direction of spray. It is permissible to further blow through in opposite direction of spray with compressed air. Do not use solid objects to clean washer jets!*

Rear window washer jets, adjusting

⇒ *Repair Manual, Maintenance, Repair Group 00,*

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Headlamp Washer System

General information

For every fifth operation of windshield washer system for the windshield, headlamps are also washed if windshield wiper lever is pulled toward steering wheel for at least 1.5 seconds - as long as low beam or high beam headlamps are switched on.

The "active time" of headlamp cleaning system can be adjusted variably between 0 seconds and 12.75 seconds ⇒ 97-6, Vehicle Electrical System Control Module J519 , coding .

After assembly work or when first operating headlamp cleaning system, it must be bled of air bubbles to ensure proper function of lift cylinders and spray jets ⇒ 92-5, Headlamp washer system, bleeding .

Note:

- *Headlamp washer function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" .*

- *Additional information:*

⇒ *Owners Manual*

⇒ *Self Study Program - Course Number 891503 "The 2006 Passat Introduction"*

⇒ *Self Study Program - Course Number 871503 "The 2006 Passat Electrical Systems Design and Function"*

⇒ *Electrical Wiring Diagrams, Troubleshooting and Component Locations binder*

CAN-Bus wire repairs ⇒ 97-8, Repairing CAN-Bus wires

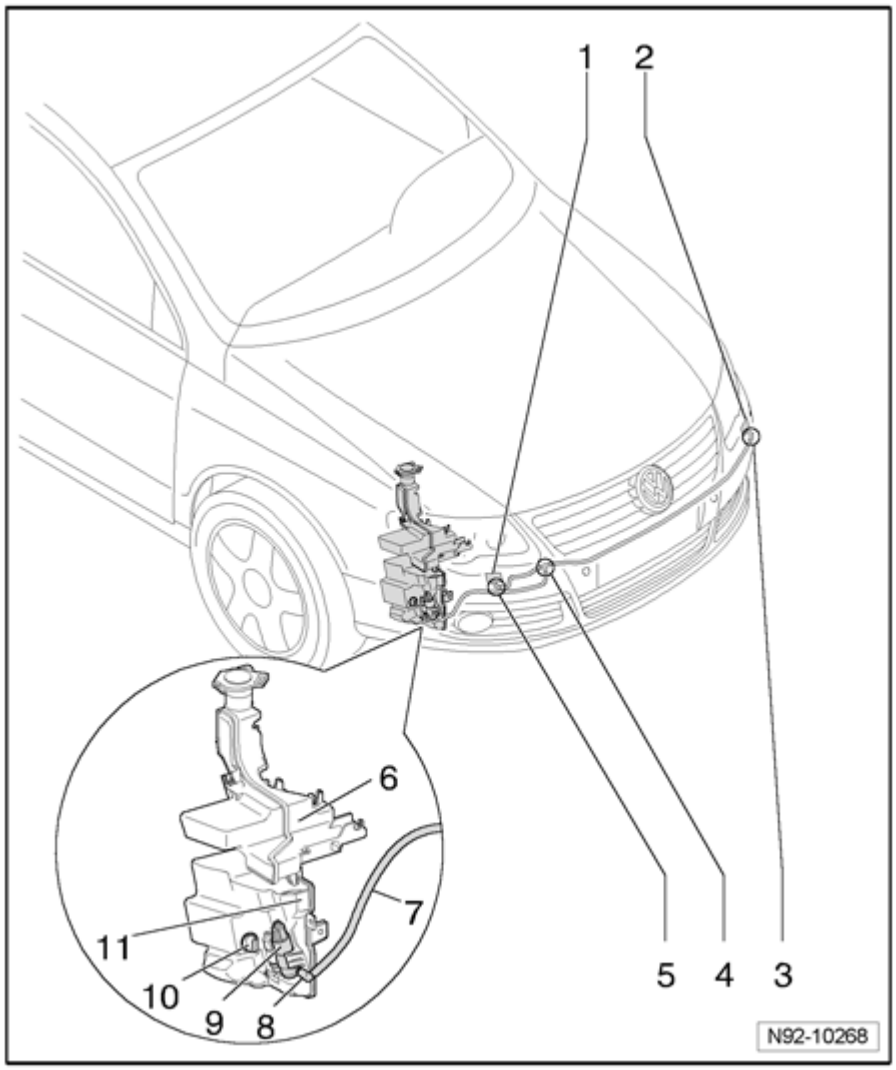
On Board Diagnostic (OBD), function

Vehicle electrical system control is equipped with On Board Diagnostics (OBD) capabilities which assists in troubleshooting.

For troubleshooting, use Vehicle Diagnostic, Testing and Information System VAS 5051/5052 in operating mode

"Guided Fault Finding" .

Headlamp washer system, component overview



- **Right washer jet telescopic cylinder**
  - Washer jet retainer, removing and installing ⇒ 92-5, Washer jet retainer, removing and installing
  - Washer jets, adjusting ⇒ 92-5, Washer jets, adjusting
  - Washer jet telescopic cylinder, removing and installing ⇒ 92-5, Washer jet telescopic cylinder, removing and installing

- **Left washer jet telescopic cylinder**
  - Washer jet retainer, removing and installing ⇒ 92-5, Washer jet retainer, removing and installing
  - Washer jets, adjusting ⇒ 92-5, Washer jets, adjusting
  - Washer jet telescopic cylinder, removing and installing ⇒ 92-5, Washer jet telescopic cylinder, removing and installing
- **Angle coupling**
  - Washer hose coupling to left washer jet
  - Hose couplings, overview ⇒ 92-6, Washer Hose Couplings
- **T-piece**
  - Routes washer hoses to headlamp washer jets
- **Angle coupling**
  - Coupling to right washer jet telescopic cylinder
  - Hose couplings, overview ⇒ 92-6, Washer Hose Couplings
- **Washer fluid reservoir, upper part**
  - Removing and installing ⇒ 92-2, Upper washer fluid reservoir, removing and installing
  - Single version washer fluid reservoir, removing and installing ⇒ 92-2, Single

design washer fluid reservoir, removing and installing .

- **Hose**
- **Angle coupling**
  - Washer hose coupling to Headlamp Washer Pump
- **Windshield Washer Pump V11**
  - Removing and installing ⇒ 92-5, Headlamp Washer Pump V11 , removing and installing
  - Checking ⇒ 97-6, Vehicle Electrical System Control Module J519 , Output Diagnostic Test Mode (DTM)
- **Windshield Washer Fluid Level Sensor G33**
  - Removing and installing ⇒ 92-2, Windshield Washer Fluid Level Sensor G33 , removing and installing
- **Washer fluid reservoir, lower part**
  - Removing and installing ⇒ 92-2, Lower washer fluid reservoir, removing and installing

Headlamp Washer Pump V11 , removing and installing

Headlamp Washer Pump V11 is installed at washer fluid reservoir in right wheel housing.

Removing:

Caution!

- ***Switch off all electrical consumers.***

- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper*

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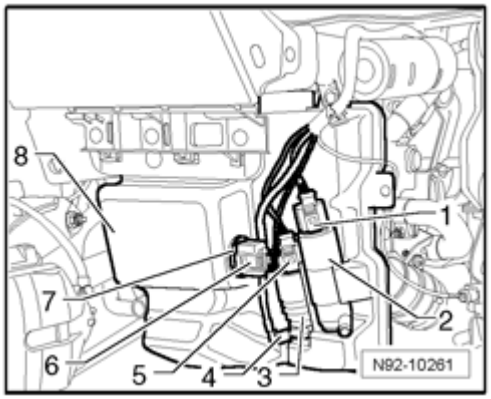


- Disconnect electrical connection **- 1 -** and pull pump **- 2 -** upwards out of reservoir.

- If necessary, retain washer fluid using a suitable container.

Installing:

Install in reverse order of removal, noting the following:

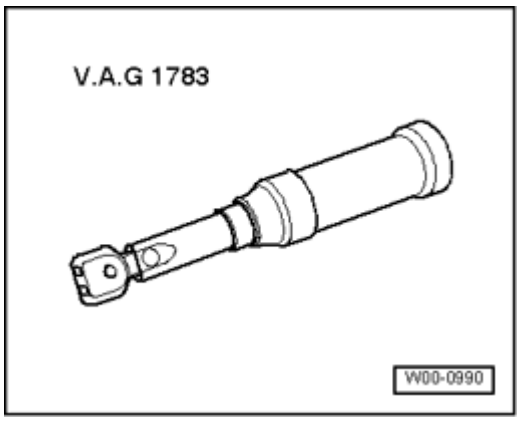
- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Headlamp Washer Pump V11 , checking

Headlamp Washer Pump V11 function can be checked using Vehicle Electrical System Control Module J519 On Board Diagnostic (OBD) program function "Output Diagnostic Test Mode (DTM)" ⇒ 97-6, Vehicle Electrical System Control Module J519 , Output Diagnostic Test Mode (DTM) .

Washer jet telescopic cylinder, removing and installing

Special tools, testers and auxiliary items required



- Torque Wrench (5-60 Nm) VAG 1783 (or equivalent)

Note:

- *Illustrations depict removal and installation of right telescopic cylinder. Procedure for left cylinder is the same.*

Removing:

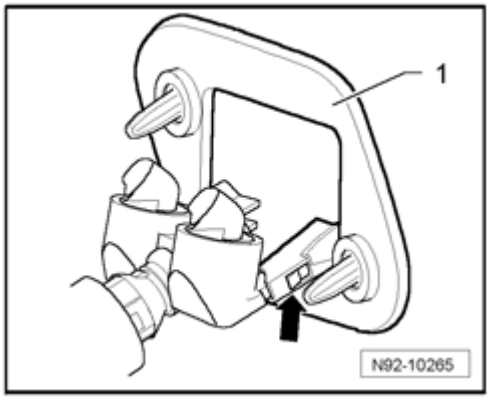
Caution!

- ***Switch off all electrical consumers.***
- ***Switch ignition off and remove ignition key.***

- Remove front bumper cover

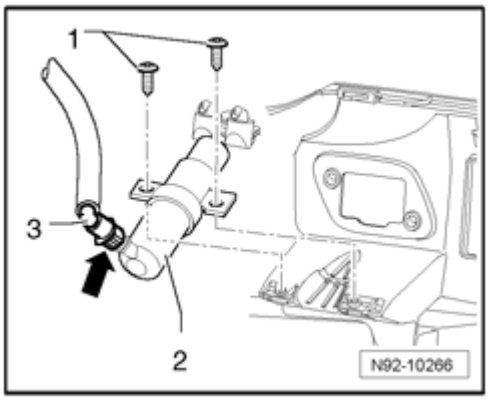
⇒ *Repair Manual, Body Exterior, Repair Group 63, Front bumper*

.



- Remove washer jets with cover cap - **1** - up to stop out of bumper cover.

- Unclip cover cap - **1** - from retainers - **arrows** - on telescopic cylinder.



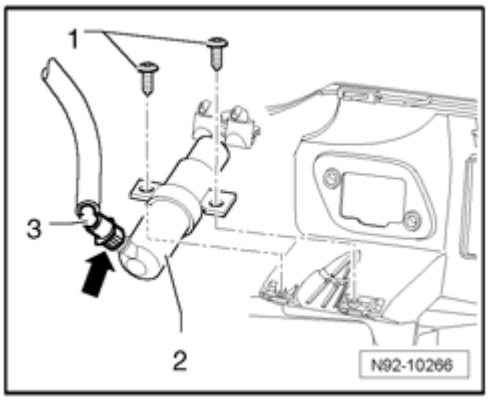
- Hold locking clip pressed - **arrow** - at hose coupling - **3** - and pull hose from cylinder.

- Remove screws - **1** - .

- Remove telescopic cylinder - **2** - from bumper cover.

Installing:

Install in reverse order of removal, noting the following:



- Tighten screws - **1** - according to value in table ⇒ 92-8, Windshield Wiper and Washer System, tightening torques .

- Bleed headlamp washer system after completing assembly work ⇒ 92-5, Headlamp washer system, bleeding .

Washer jet retainer, removing and installing

Note:

- *The telescopic cylinder and washer jet are integrated and cannot be serviced or replaced separately. In the event of malfunction, replace entire telescopic cylinder and washer jet assembly.*

Washer jets, adjusting

Caution!

- ***Potential for damage.***
- ***The washer jet can be damaged.***
- ***Do not use solid objects to clean washer jets!***

Washer jets, adjusting

⇒ *Repair Manual, Maintenance, Repair Group 00,*

.

Headlamp washer system, bleeding

After assembly work or when first operating headlamp cleaning system, it must be bled of air bubbles to ensure proper function of lift cylinders and spray jets .

- Fill washer fluid reservoir.

Warning!

- ***Engage handbrake.***
- ***Ensure automatic transmission is in range "P" .***
- ***Ensure manual transmission is in "neutral" .***

- Start the engine.

- Switch headlamps to "ON" .

- Operate headlamp cleaning system several times (3-5 impulses for every 3 second period).

- If necessary, repeat this ventilation procedure until proper function of lift cylinders and spray jets is obtained.

Headlamp washer system, adaptation

The "active time" of headlamp cleaning system can be adjusted between 0 seconds and 12.75 seconds.

Headlamp washer system, adaptation ⇒ 97-6, Headlamp washer system, adaptation .

92 - 6

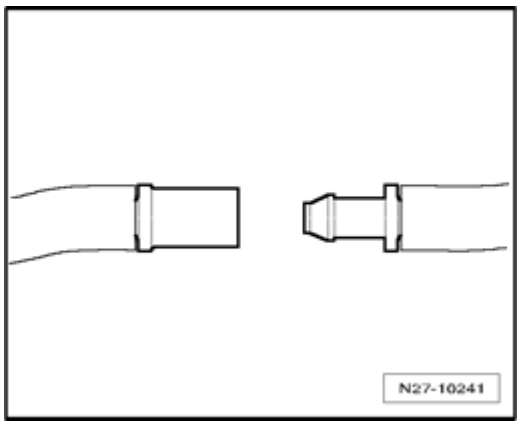
Washer Hose Couplings

General information

Several different designs of washer hose couplings are used in the windshield, rear window (where applicable) and headlamp washer systems.

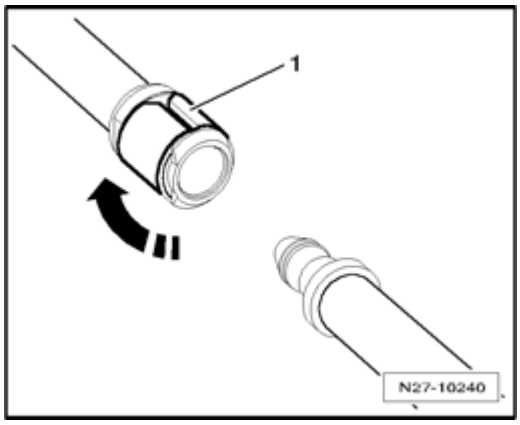
Each coupling requires specific actions in order to disconnect and reconnect.

Windshield and rear window washer system



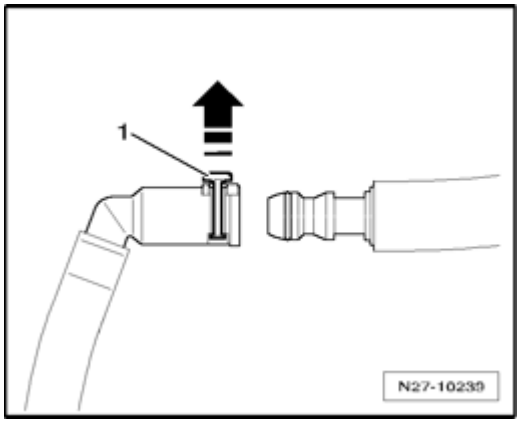
- Disconnect by pulling apart both halves of coupling.

- Reconnect by pushing both halves of coupling together until felt and heard to engage.



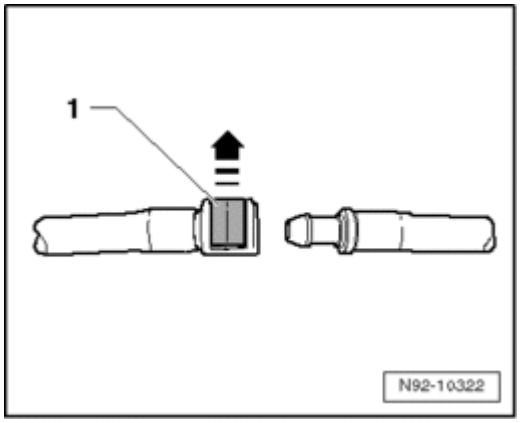
- Disconnect by turning lock ring **- 1 -** through 90 ° **- arrow -** and then pulling apart both halves of coupling.

- Reconnect by pushing both halves of coupling together and rotating locking ring **- 1 - - arrow -** until it engages.



- Disconnect by lifting lock ring **- 1 -** approx. 1 mm **- arrow -** and then pulling apart both halves of coupling.

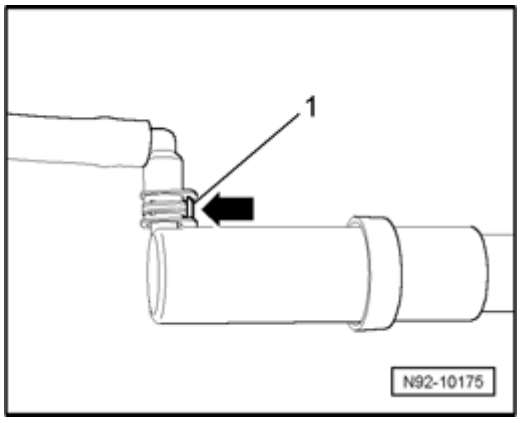
- Reconnect by pushing both halves of coupling together and clipping locking ring **- 1 -** until it engages.



- Disconnect by lifting lock ring **- 1 - - arrow -** and then pulling apart both halves of coupling.

- Reconnect by pushing both halves of coupling together and clipping locking ring **- 1 -** until it engages.

Headlamp Washer System



- Disconnect by depressing clip **- 1 - - arrow -** and then separating coupling from jet.

- Reconnect by keeping clip **- arrow -** depressed while pushing coupling onto jet until it engages. Check securing clip for secure locking by attempting to pull it off without depressing clip.

92 - 7

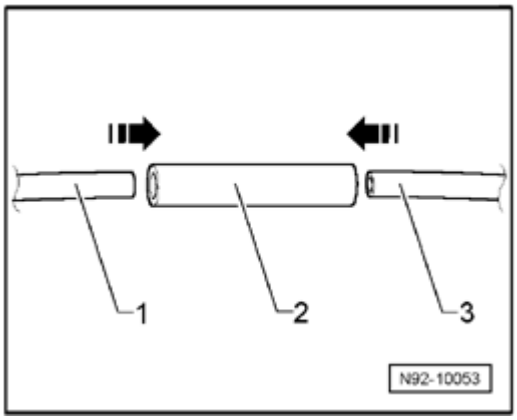
Washer Hoses, repairing

General information

A concept has been developed to facilitate the repair of washer hoses. Various individual hose connectors, adaptors, Ethylene Propylene Diene Methylene (EPDM) rubber hoses and shrink tubing will be offered as replacement parts.

- Replacement parts can be found in ⇒ *Parts Catalog (ETKA)* .

- The replacement parts are available both for the repair of a smooth tube as well as for the repair of a corrugated tube.



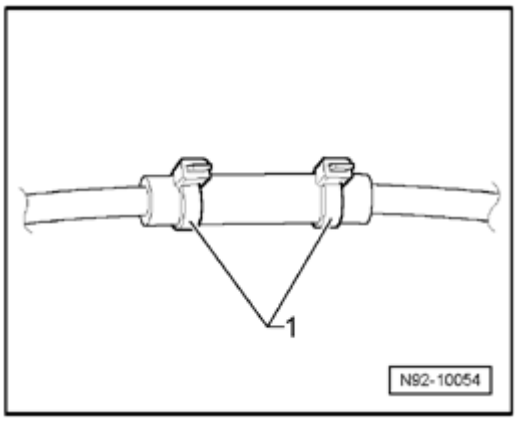
Smooth hoses, repairing

Smooth hoses with a diameter of 5 x 1 mm or 6 x 1 mm can be repaired with a EPDM repair hose section.

- Trim and remove damaged sections of hose.

- Choose a matching EPDM-hose **- 2 -** and cable ties according to ⇒ *Parts Catalog (ETKA)* .

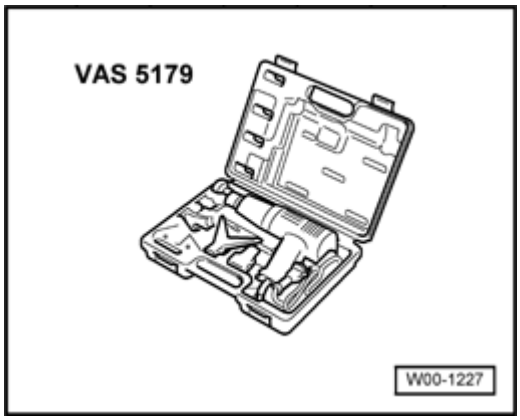
- Cut a length of EPDM hose **- 2 -** so that the smooth tube ends **- 1 -** and **- 3 -** can be pushed at least 10 mm into the EPDM hose **- 2 -** .



- Secure with cable ties as illustrated **- 1 -** .

Corrugated hoses, repairing

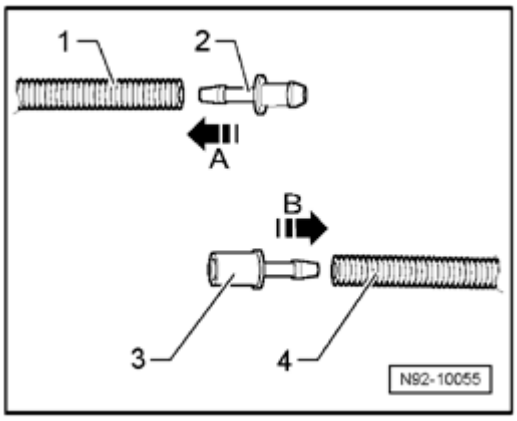
Special tools, testers and auxiliary items required



- Hot air blower VAS 5179 or
- Hot air blower VAG 1416/ or
- Heat gun VAS 1978/14

Note:

- *Area to be repaired must but be under stress of stretching or bending.*
- *If damaged area is longer than 20 mm, a new section of corrugated hose must be obtained, and two sets of adapters inserted using following the following procedure.*



- Trim and remove damaged sections of hose.

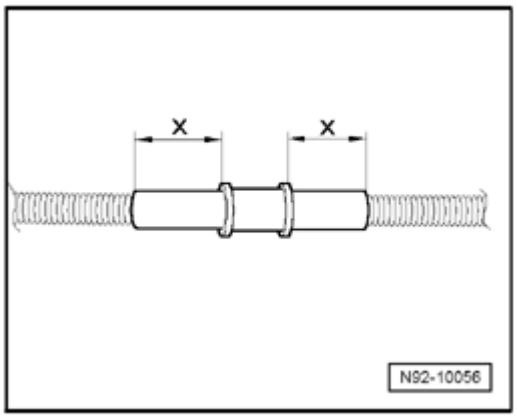
- Choose matching repair adapters **- 2 -** and **- 3 -** appropriate shrink tubing from ⇒ *Parts Catalog (ETKA)* .

- Carefully warm end of hose **- 1 -** .

- Insert repair adapter **- 2 -** into hose **- 2 - - arrow A -** .

- Carefully warm end of hose **- 4 -** .

- Insert repair adapter **- 3 -** into hose **- 4 - - arrow B -** .



- Trim shrink tubing sections so that corrugated hose is covered a minimum of 20 mm **- dimension x -** of heat-shrink sleeve.

- Slide shrink tubing over corrugated hose, attach adapters together and secure repair with shrink tubing.

92 - 8

Windshield Wiper and Washer System, tightening torques

Windshield wiper and washer system, tightening torques

Fasteners		Tightening torques
Wiper motor to wiper frame	M6	9 Nm
Motor crank to wiper motor shaft	M8	17 Nm
Wiper assembly to body (upper screws)	M6	8 Nm
Wiper assembly to body (lower screws)	M6	5 Nm
Front wiper arm to wiper motor shaft	M8	20 Nm
Washer fluid reservoir screws	M6	8 Nm

Rear Window wiper and washer system, tightening torques

Fasteners		Tightening torques
Wiper motor to rear lid, nuts	M6	8 Nm
Wiper arms to shaft, nuts	M8	12 Nm

Headlamp Washer System, tightening torques

Fasteners		Tightening torques
Telescoping cylinder with washer jets to bumper cover, screws		2.8 Nm